

Claims

What is claimed is:

1. A peptide for increasing bone density in a mammalian subject, said peptide being from 3 to 13 amino acids in length and comprising the first 3 to 13 amino acids of SEQ ID NO. 1.
2. The peptide of claim 1 wherein the peptide is glycosylated.
3. The peptide of claim 2 wherein the peptide comprises an N-acetylgalactosamine attached to the threonine residue at the position 3 of the peptide.
4. The peptide of claim 1 wherein the peptide lacks a sugar moiety.
5. A peptide for increasing bone density in a mammalian subject,
wherein said peptide is from 12 to 18 amino acids in length;
wherein said peptide comprises a sequence which is at least 70% identical to a sequence of a peptide fragment from domain III of DBP,
wherein the third amino acid of said peptide fragment is the threonine that is glycosylated in DBP, and
wherein administration of said peptide to an adult rat at a dose of 0.4 ng/g body weight every other day for two weeks results in an increase in bone density in the peptide-treated animal as compared to a control animal.
6. The peptide of claim 5 wherein the peptide comprises a sequence which is at least 70% identical to SEQ ID NO. 1.
7. The peptide of claim 5 wherein the peptide comprises a sequence which is at least 80% identical to SEQ ID NO. 1.
8. The peptide of claim 5 wherein the peptide comprises a sequence which is at least 90% identical to SEQ ID NO. 1.
9. A method for promoting bone deposition comprising administering to a mammalian subject a therapeutically effective amount of an agent selected from the group consisting of ADBP, one or more DBP peptides, and combinations thereof.

10. The method of claim 9 wherein the ADBP comprises a galactosamine attached to a threonine or a serine located in domain III.
11. The method of claim 9 wherein the DBP from 3 to 13 amino acids in length and comprises the first 3 to 13 amino acids of SEQ ID NO. 1.
12. The method of claim 11 wherein the DBP peptide lacks a sugar moiety.
13. The method of claim 11 wherein the DBP peptide comprises a sugar residue attached to the threonine residue at position 3 of the peptide.
14. The method of claim 13 wherein the sugar residue is an N-acetylgalactosamine.
15. The method of claim 11 wherein the DBP peptide is from 12 to 18 amino acids in length and comprises a sequence which is at least 70% identical to a sequence of a peptide fragment from domain III of DBP, wherein the third amino acid of said peptide fragment is the threonine that is glycosylated in DBP.
16. The method of claim 15 wherein the peptide comprises a sequence which is at least 70% identical to SEQ ID NO. 1.
17. The method of claim 9 wherein the agent is administered by systemic injection.
18. The method of claim 9 wherein the agent is administered by local injection or infusion.
19. The method of claim 9 wherein the agent is administered at least twice during a four day period.
20. The method of claim 9 wherein the agent is administered orally.
21. The method of claim 9 wherein the agent is administered at doses which are at least 10 fold greater than doses which have been shown to induce bone resorption in vivo.